AAHMS submission to the ARC review consultation December 2022

Introduction

The Australian Academy of Health and Medical Sciences welcomes the opportunity to respond to Department of Education's review of the Australian Research Council. We are Australia's Learned Academy for health and medical sciences – the impartial, authoritative, cross-sector voice for the sector. We advance research and innovation in Australia to improve everyone's health.

We are an independent, interdisciplinary body of Fellows – elected by their peers for their outstanding achievements and exceptional contributions to health and medical science in Australia. Collectively, they are a representative and independent voice, through which we engage with the community, industry and governments.

This response has been informed by contributions from Fellows and Associate Members of the Academy as well as other experts. We are grateful for their valuable contributions.

Response to consultation questions –entered via online survey

Q1.   How could the purpose in the ARC Act be revised to reflect the current and future role of the ARC?
For example, should the ARC Act be amended to specify in legislation:
   a.   the scope of research funding supported by the ARC;
   b.   the balance of Discovery and Linkage research programs;
   c.   the role of the ARC in actively shaping the research landscape in Australia; and/or
   d.   any other functions?
   If so, what scope, functions and role?
   If not, please suggest alternative ways to clarify and define these functions.

Australia is home to some of the world's most pre-eminent researchers who have contributed significantly to shaping the scientific, social, cultural and economic landscape, both in Australia and globally. We have punched above our weight in delivering some of the highest quality research internationally. The Australian Research Council (ARC) has played a crucial role in this success, having funded important research with many positive outcomes for the nation, including valuable contributions to economic growth and jobs creation. To ensure we keep pace in an increasingly competitive global landscape we must now re-evaluate our goals and enhance the system so that the success can continue. By doing so we can grow and nurture Australia's research and innovation landscape for the benefit of the whole community.

As the biggest funder of research outside of health and medicine, the ARC plays a critical role in shaping an optimised, thriving research ecosystem. As the Review Panel considers how the ARC can be strengthened and enhanced as a research funder, we urge it to also consider the broader context within which the ARC operates, both in Australia and globally.

The ARC, and the research it funds, does not exist within a silo. Investment in all research and development has the potential to influence productivity and growth, social justice, education,

diversity, scientific advancement, industry, health and more. Indeed, much of the work the ARC has supported to date has had positive impacts in these areas as a result of investment across disciplines from science and engineering through to social sciences and humanities. At present, the functions of the ARC, as specified in the ARC Act, do not state its role in influencing and being responsive to the broader ecosystem. The Act could better acknowledge this as an important role.

To achieve maximum benefit in Australia and globally, we must be strategic in the way we deploy our resources. Building on its existing strengths, the ARC has an opportunity to use its levers to shape Australia as a research and innovation powerhouse, with the potential for global impact. An important first step would be to better align our major federal research funders – particularly the ARC, the National Health and Medical Research Council (NHMRC) and the Medical Research Future Fund (MRFF). The Australian Academy of Health and Medical Sciences (the Academy) highlighted the additional benefits of doing so in our recent report *'Research and innovation as core functions in transforming the health system: A vision for the future of health in Australia'*.

The best research and innovation comes from a coordinated system that allows for collaboration and convergence of knowledge. As scientific and societal problems become more complex, the research and innovation needed to solve them must be facilitated by an adaptable and harmonised system. This would also benefit Australia's standing as an influential research nation on the global stage – allowing us to attract the best talent and collaborate internationally for global good. However, the ARC Act does not currently specify the ARC's role in this regard. We would suggest that the Act could be updated to include functions that will better empower the ARC to carry out this role, although we would stress that this should not become overly prescriptive. To dynamically influence and impact a broader ecosystem, the ARC should be responsive to national and international shifts and trends, including those that could inform economic, scientific, social and cultural growth.

One option that the Panel could consider to better achieve this balance, would be to incorporate some detail about scope and function into Regulations complementing the ARC Act. We would also note that international examples may provide useful reference points. For instance, the Act governing UK Research and Innovation (UKRI) might provide a useful example in the way that it sets out the role and functions of this body in driving research and innovation as a tool to benefit the UK and beyond.

In addition to the high-level suggestions above, we suggest that as the Panel works to define and clarify the functions of the ARC, the Panel should consider the following issues:

- **Interdisciplinary research:** The crucial role of interdisciplinary research in addressing complex and nuanced social, economic, ecological and political challenges is widely accepted. The convergence of ideas, knowledge and approaches to research and innovation that are generated through team-based interdisciplinary collaboration have a unique and substantial impact. At present, the ARC is the major funder of interdisciplinary research in Australia however, there are significant structural barriers that prevent this type of research and innovation from flourishing. For instance, some programs lack a mechanism to assess grant applications between grant panels. Some researchers we heard from in developing this response described feeling disheartened with the process for submitting interdisciplinary applications.

As the global research community moves towards greater interdisciplinarity, Australia must actively facilitate this type of research, or we risk falling behind. Interdisciplinary research is also important in advancing the Australian Government's strategic priorities for translation and commercialisation.

As the main Australian Government funder of research outside of health and medicine, there is an important distinction between the ARC and the national health and medical research funders, particularly the NHMRC and the MRFF. Better coordination between these funders, as suggested above, would also help to ensure interdisciplinary research that crosses these areas can be appropriately supported.

We would encourage the Panel to consider opportunities for: (1) better assessing and determining applications for interdisciplinary research; and (2) more harmonisation and coordination between the ARC and other funders. For interdisciplinary research impacting human health, better coordination with the NHMRC and MRFF is needed, and in this context, the ARC should also revisit its medical research policy to ensure it is fit for purpose, in liaison with those other funders.

- **Balance between discovery and applied research:** There is no individual or organisation that can predict where the biggest impact from research and innovation will come from. Curiosity-driven research that is borne out of genuine intellectual freedom, and critical appraisal by colleagues, has led to some of the world's most important discoveries that have in turn shaped the world in which we live. An important example of this is the discovery made by Nobel prize winning scientist Professor Osamu Shimomura whose curiosity drove him to ask why a certain jellyfish glowed bright green while agitated. This question led him to develop a technique to tag a protein or molecule of interest with a fluorescent marker. Today's scientists use this technique to visualise underlying biological processes relevant to numerous human diseases. Shimomura's discoveries have revolutionised neuroscience for the benefit of health. The impacts of this type of basic scientific research could not have been anticipated at the time of discovery. The ARC plays a vital role in supporting discovery research. As the Panel reviews the ARC's funding distributions as part of the Act, it should be made clear that funding should better support basic research, for which the potential applications may not yet be known.

Q2. **Do you consider the current ARC governance model is adequate for the ARC to perform its functions?**

If not, how could governance of the ARC be improved? For example, should the ARC Act be amended to incorporate a new governance model that establishes a Board on the model outlined in the consultation paper, or another model;

Please expand on your reasoning and/or provide alternative suggestions to enhance the governance, if you consider this to be important.

The ARC should be led and underpinned by the best, most appropriate academic expertise. Robust governance that harnesses diverse and high-quality research expertise would improve the ARC's strategic direction and better enable effective decision-making. As highlighted in our response to question one, the ARC also exists within a broader ecosystem; expertise

from outside research could be incorporated into the governance structures to promote a wider range of perspectives.

UK Research and Innovation (UKRI) might provide a useful example of a governance structure to be considered by the Panel as it assesses the most appropriate mechanisms for an Australian setting. The UKRI Board is its primary governing body. It has general oversight of UKRI's activities and is responsible for achieving its strategic objective and mission. The board is made up of UKRI's Chair, Chief Executive and Chief Finance Officer, as well as between nine and 12 independent members drawn from higher education, industry, commerce, policy and non-governmental organisations.

Q3. **How could the Act be improved to ensure academic and research expertise is obtained and maintained to support the ARC?**

How could this be done without the Act becoming overly prescriptive?

The ARC has a strong reputation for utilising high quality and transparent academic and research expertise. However, there are still several barriers to attracting and retaining this expertise to support the ARC as it works to advance a thriving research and innovation system in Australia. Although the ARC has a strong peer review process, in preparing this submission, we heard about particular issues that could be addressed to make the system more robust and consistent. For instance, within the current mechanisms, lead peer reviewers are sometimes asked to comment on, or decide the outcomes of, applications for which they do not have relevant expertise. The ARC should continue its efforts to ensure it has a pool of reviewers with the necessary expertise to review the wide range of applications it receives. There may also be an opportunity to develop more effective matching of reviewers and applications.

It may not be appropriate to include a high level of detail within the ARC Act since some flexibility for the ARC to seek and grow academic and research expertise is needed. However, the Academy encourages the Panel to improve the mechanisms for engaging academic and research expertise, whether through the Act or by other means.

Q4. **Should the ARC Act be amended to consolidate the pre-eminence or importance of peer review?**

Please provide any specific suggestions you may have for amendment of the Act, and/or for non-legislative measures.

The ARC has an important role to play in upholding the pre-eminence of the peer review process in the determination of research funding. The Academy released a joint statement with the other Learned Academies and the Australian Council of Learned Academies in February 2022 cautioning against compromising the integrity of Australia's research system through perceived, or actual, political interference.

Although the Federal Government is responsible and accountable for the expenditure of taxpayer funds, decisions to veto grants that have been approved through the ARC's peer-reviewed process – without expert consultation, detailed feedback, or option to appeal – should not occur. Past decisions to this effect have had real world consequences, impacting

individual researchers, their careers, programs of research, the research community and the Australian public more broadly.

The Academy supports a change to the ARC Act in line with international best practice to protect the pre-eminence of peer review in the determination of research funding. This should be explicitly stated within the Act and in circumstances where the Minister does not solely rely on recommendations made by the CEO following peer review, the Act could ensure greater transparency and accountability around this decision-making.

Q5.   Please provide suggestions on how the ARC, researchers and universities can better preserve and strengthen the social licence for public funding of research?

The Academy welcomes the recent announcement regarding the changes to the National Interest Test (NIT) process. We hope these changes will be an important first step to addressing the significant issues around the NIT as they stand. In developing our response to this consultation, we heard that the NIT does not adequately fulfill its stated purpose to entrench and enhance the social licence to provide public funding for research through the ARC. In addition, as noted in the review consultation paper, the grant application selection criteria already assess the value and potential benefit of research to the community – and this is reviewed at multiple points throughout the process. This duplication of effort for the same, or similar, purpose is placing an unnecessary burden on researchers.

The NIT process is subjective and does not appear to be applied consistently, creating numerous challenges. Clearly, it is important that researchers outline the value of their research, and this is something we fully support. However, in developing this response, we heard that the NIT is a time consuming and resource intensive process for many researchers. This is in part because it represents a duplication of effort, but also, for example, because the guidance is not clear or scalable across different research disciplines. This is concerning because it takes time away from researchers progressing the important research and innovations they are being funded to deliver.

It is important to strengthen the social licence for publicly funded research. The Academy supports meaningful, open and ongoing communication that builds trust and enhances the public's understanding of the benefits of all research. Although we note the recent announcement, we would nevertheless encourage the Panel to continue to look at ways to consolidate the selection criteria and develop consistent and thorough advice on best practice. For instance, a requirement could be for applicants to develop one summary statement, fit for all purposes, to be incorporated into the existing national benefit selection criteria. In addition, the Academy supports reframing the criteria to better account for high quality research, for which the future impacts may not be known at this stage– an example of which is noted in our response to question one. We also strongly encourage the utmost transparency and accountability in the assessment of national interest.

Q6.   What elements of ARC processes or practices create administrative burdens and/or duplication of effort for researchers, research offices and research partners?

In developing our response to this consultation, the researchers we heard from reinforced the feedback received by the Panel, noted in the consultation paper, including:

- **Onerous requests for information, including duplication:** In addition to the issue of administrative duplication within the ARC, of which the Panel is aware, the systems used to record grant applications and career track records across different research funders also present a significant administrative burden. It is onerous for researchers to work with multiple formats across different systems to input the same information that could be used more than once. This again takes time away from delivering the important research being funded. While this is not solely the responsibility of the ARC, it is well positioned to take on a leadership role as part of this review. The ARC could encourage national funding bodies to harmonise approaches where possible, to benefit all researchers and those assessing applications. In addition, the requirements for the opportunity and performance evidence statement, which currently need to be submitted in various formats and sections as part of the ARC process, could be streamlined to reduce burden.
- **Unexpected changes to grant rules and deadlines:** Where possible, the ARC should continue to improve its process for setting and communicating grant rules and deadlines. In cases where it is not possible to be consistent, there should be clear, concise and advanced communication with researchers and the appropriate provision of guidance and support.
- **Prescriptive financial requirements:** The ARC could reassess their application process and where possible provide more appropriate approaches to standardising costs that can be used in multiple ways for researchers preparing their budgets. At present, it is time consuming and burdensome for researchers to individually calculate all financial requirements, particularly when budgets are often not fully funded.

Q7. **What improvements could be made:**
   a.   **to ARC processes to promote excellence, improve agility, and better facilitate globally collaborative research and partnerships while maintaining rigour, excellence and peer review at an international standard?**
   b.   **to the ARC Act to give effect to these process improvements, or do you suggest other means?**
   Please include examples of success or best practice from other countries or communities if you have direct experience of these.

As highlighted in our response to question one, in a globally competitive environment, the ARC must see itself as an international collaborator to ensure it continues to advance Australia as a truly global player in research and innovation. It is crucial that the ARC engages with its counterparts overseas and with international funding networks. As we have seen throughout the COVID-19 pandemic, no country has the resources to tackle these kinds of major challenges alone. Australia has an opportunity to further advance its shared ingenuity, innovation and investment to enable a sustainable and thriving global research environment. Australia should play its role in building global research capacity, and it is also important to note that research and innovation are key levers for 'soft diplomacy'.

Best practice approaches can be seen in countries like the Israel, Japan, Korea, Singapore, Switzerland, United Kingdom and United States. The biggest funding bodies in these countries have established principles that allow them to strategically attract and retain global talent, build international networks, and use their influence to advance research and innovation for global benefit. The ARC could undertake a thorough review of best practice

from countries such as these. The ARC should ultimately measure itself against international best practices and develop stronger partnerships for strategic collaboration.

As noted in question one, to be successful in achieving this goal, Australia must present a united, coordinated and cohesive research ecosystem to the world. The ARC must see itself as a key player within this ecosystem, and work more closely with local research funders, academic and research partners, governments, industry, and the community to develop a sophisticated system, primed for global engagement.

Q8. **With respect to ERA and EI:**
   a. **Do you believe there is a need for a highly rigorous, retrospective excellence and impact assessment exercise, particularly in the absence of a link to funding?**
   b. **What other evaluation measures or approaches (e.g. data driven approaches) could be deployed to inform research standards and future academic capability that are relevant to all disciplines, without increasing the administrative burden?**
   c. **Should the ARC Act be amended to reference a research quality, engagement and impact assessment function, however conducted?**
   d. **If so, should that reference include the function of developing new methods in research assessment and keeping up with best practice and global insights?**

The Academy encourages the Panel to re-evaluate the purpose of the ERA, particularly with respect to its contribution to the ARC's overarching goals, its funding and its position in the broader research ecosystem in Australia and globally. It is clear from the feedback we received in developing this response that the ERA is not working to fulfill its full purpose as currently defined, making it challenging for the research community to see the benefit of this very involved process.

The Academy supports the current, more comprehensive analysis of the ERA, which should aim to clarify its relevance, purpose and function. It will be important for the ERA review to acknowledge that research 'impact' changes over time and differs between disciplines. Attempts to incorporate it into the legislation could restrict this type of assessment, making it less relevant to its purpose.

Q9. **With respect to the ARC's capability to evaluate research excellence and impact:**
   a. **how can the ARC best use its expertise and capability in evaluating the outcomes and benefits of research to demonstrate the ongoing value and excellence of Australian research in different disciplines and/or in response to perceived problems?**
   b. **what elements would be important so that such a capability could inform potential collaborators and end-users, share best practice, and identify national gaps and opportunities?**
   c. **would a data-driven methodology assist in fulfilling this purpose?**

The Academy supports the use of data-driven methodology to assist with evaluating research excellence and impact. However, we urge the Panel to consider that data-driven methods alone will not be sufficient for this purpose – such as using citations to assess research impact. These methodologies have some limitations, including the inability to discern a

citation in support of a publication from a citation that is more critical of a publication. There are also known biases in citation, such as gender and other biases that could influence evaluation outcomes. Journal quality rankings also have limitations, such as how the data provider defines a research grouping. This has the potential to make things more challenging for interdisciplinary research.

Q10. **Having regard to the Review's Terms of Reference, the ARC Act itself, the function, structure and operation of the ARC, and the current and potential role of the ARC in fostering excellent Australian research of global significance, do you have any other comments or suggestions?**

In developing a response for this consultation, we heard several points from researchers that we believe warrant consideration by the Panel:

- **Diversity and inclusion:** The Academy suggests that the ARC could play a bigger role in promoting and advancing diversity and inclusion in the research and innovation workforce in Australia – for instance in gender equity and Aboriginal and Torres Strait Islander led research. As a key influencing body within the research ecosystem, the ARC could do more to lead by example, promoting diversity through its own funding and championing an inclusive workforce through its networks. As a first step, the ARC could analyse its own data on diversity in its grant programs and report its results and goals for advancing this area. This reporting should be as detailed as possible to ensure a high level of transparency. For instance, the ARC could report the gender of the Lead Chief Investigator (CI) in addition to the overall number of male and female CIs.
- **Early- and mid-career researchers:** The ARC has, and continues to, play a significant role in developing Australia's research workforce at all career stages. While the Discovery Early Career Research Award Scheme (DECRA) aims to support early- and mid-career researchers, The Academy understand that the majority of applicants, successful or not, are more towards the middle stage of their career. This has affected the opportunities for early career researchers, limiting their ability to receive the necessary funding to produce high quality research and advance their careers. In addition, there are several similar gaps in the ARC's suite of fellowship support, which has the potential to affect the pipeline to future research excellence in Australia. The Academy supports strategic policies and practices that stem from a long-term vision to elevate the national research workforce in the future. These policies and practices should ensure talented researchers are supported at all career stages and in more flexible ways.
- **Transparency and feedback for grant applications:** One of the key benefits of the peer review process is that feedback can be used to improve future applications. We heard from researchers that they would benefit from greater transparency in how their applications are assessed and more opportunities to receive feedback.
- **Medical research institutes:** At present, medical research institutes (MRIs) are not eligible for ARC funding. MRIs contribute to important basic and interdisciplinary research. While it is not the ARCs role to fund medical research, it could work more closely with health and medical research funders to ensure better mechanisms for involving MRIs in ARC projects where appropriate.